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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/747,945	12/21/2000	Gregg D. Wilensky	07844-484001 / P448	3476

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EXAMINER

VO, TUNG T

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/747,945

Applicant(s)

WILENSKY, GREGG D.

Examiner

Tung T. Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-98 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-98 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-4, 7-9, 19, 20, 38, 49-51, 69 and 87 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen (US 6,556,704 B1).

Re claims 1, 20, and 49-51, Chen discloses a method that is implemented on the computer (fig. 12) for masking a foreground portion of a digital image from a background portion of a digital image (218 of fig. 6), the digital image being part of a video comprising a

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time sequence of digital images (211b, TOP IMAGE, 211a, BOTTOM IMAGE of fig. 6), each image being defined by a plurality of pixels (col. 3, fig. 1, e.g. pixel locations), the method comprising:

receiving a first input defining a first border region (14a of fig. 1), the first border region including at least a part of the foreground portion (14a of fig. 1 is a part of the foreground) and at least a part of the background portion (15a of fig. 1) in a first digital image (BOTTOM IMAGE of fig. 1);

receiving a second input defining a second border region (14b and 15b of fig. 1), the second border region including at least a part of the foreground portion (14b of fig. 1) and at least a part of the background portion (15b of fig. 1) in a second digital image (TOP IMAGE of fig. 1);

interpolating an intermediary border region for an image intermediary in time to the first and second digital images (fig. 11, col. 11, line 31 through col. 12, line 30);

and using the first, second, and intermediary border regions for masking the foreground portion from the background portion in the digital video (20 of figs. 1, 2; and 218 of fig. 6; see also col. 10 line 67 through col. 11, line 30).

Re claim 2, Chen further discloses wherein receiving a first and a second input comprise: receiving user inputs defining the border regions (116 and 118 of fig. 12); and where interpolating an intermediary border region comprises: interpolating an intermediary border region automatically without user input (218 of fig. 6, e.g. an algorithm (218) generates foreground depth mask formation).

Re claim 3, Chen further discloses determining for a pixel in a border region whether it includes data that is associated with the foreground portion (216 of fig. 6, col. 7, line 29 through col. 10, line 4); and using the result of the determining step to mask the foreground portion from the background portion in the digital video (col. 10, line 8, through col. 11, line 15).

Re claim 4, Chen further discloses estimating an intrinsic color value for a pixel in the first, second, and intermediary border regions (col. 10, lines 6-66); and using the estimated intrinsic color value for extracting the foreground portion from the background portion (fig. 9).

Re claim 7, Chen further discloses wherein receiving inputs indicating the border regions comprise: generating a single path having a width encompassing that of the border region (812 of fig. 11).

Re claim 8, Chen further discloses wherein generating a single path comprises: generating a vector-based single path (col. 10, lines 60-66).

Re claims 9, Chen further discloses generating a single path having variable thickness throughout its length (fig. 11).

Re claims 19, 38, 69 and 87, Chen further discloses wherein the foreground portion is an object (14a, 14b of fig. 1).

3. Claims 1-9, 19, 49, and 50 are rejected under 35 U.S.C. 102(e) as being anticipated by Totsuka et al. (US 6,128,046).

Re claims 1, Totsuka discloses a method for masking a foreground portion of a digital image from a background portion of a digital image, the digital image being part of a video comprising a time sequence of digital images, each image being defined by a plurality of pixels

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(figs. 2A-2C), the method comprising: receiving a first input defining a first border region (object at  $t=t_1$  of fig. 3A), the first border region including at least a part of the foreground portion and at least a part of the background portion in a first digital image (Frame  $t=t_1$  of fig. 3A); receiving a second input defining a second border region (Object at  $t=t_2$  of fig. 3A), the second border region including at least a part of the foreground portion and at least a part of the background portion in a second digital image; interpolating an intermediary border region for an image intermediary in time to the first and second digital images (Steps S5-1-S5-5 of fig. 29); and using the first, second, and intermediary border regions for masking the foreground portion from the background portion in the digital video (S5-5 of fig. 29).

Re claims 2, 21, and 22, Totsuka further discloses wherein receiving a first and a second input comprise: receiving user inputs defining the border regions (Object segmentation of Frame, at  $t=t_1$  and  $t=t_2$  of fig. 3A); and where interpolating an intermediary border region comprises: interpolating an intermediary border region automatically without user input (fig. 29).

Re claim 3, Totsuka further discloses determining for a pixel in a border region whether it includes data that is associated with the foreground portion (fig. 2A); and using the result of the determining step to mask the foreground portion from the background portion in the digital video (fig. 2C).

Re claims 4 and 23, Totsuka further discloses estimating an intrinsic color value for a pixel in the first, second, and intermediary border regions (fig. 12); and using the estimated intrinsic color value for extracting the foreground portion from the background portion (fig. 18).

Re claims 5 and 26, Totsuka further discloses wherein receiving inputs indicating the border regions comprises: generating an inside path located inside a foreground portion (P2 of fig. 28B); and generating an outside path located outside the foreground portion and enclosing the inside path (P1 of fig. 28B), wherein pixels between the inside and outside paths belong to a border region (PATH AREA has pixel of fig. 28B).

Re claims 6 and 27, Totsuka further discloses wherein generating an inside path and an outside path comprise: generating a vector-based inside path and a vector-based outside path (10 of fig. 30).

Re claims 7 and 28, Totsuka further discloses wherein receiving inputs indicating the border regions comprise: generating a single path having a width encompassing that of the border region (PATH segment of fig. 28B).

Re claims 8 and 27, Totsuka further discloses wherein generating a single path comprises: generating a vector-based single path (fig. 28A).

Re claims 9, Totsuka further discloses generating a single path having variable thickness throughout its length (fig. 28B).

Re claims 19, 38, 69 and 87, Totsuka further discloses wherein the foreground portion is an object (fig. 3A).

Re claims 53-59, see the analysis in claims 1-9.

4. Claims 1-2, 19-21, 38, 49-52, 69, 87, and 98 are rejected under 35 U.S.C. 102(e) as being anticipated by Norton et al. (US 5,912,994).

Re claims 1-2, 19-21, 38, 49-52, 69, 87, and 98, Norton discloses a method that is implemented on the computer (figs. 1-6) for masking a foreground portion of a digital image

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from a background portion of a digital image (fig. 2), the digital image being part of a video comprising a time sequence of digital images, each image being defined by a plurality of pixels, the method comprising: receiving a first input defining a first border region (42 of fig. 2), the first border region including at least a part of the foreground portion and at least a part of the background portion in a first digital image; receiving a second input defining a second border region (42 of fig. 2, more objects of the second frame or image), the second border region including at least a part of the foreground portion and at least a part of the background portion in a second digital image; interpolating an intermediary border region for an image intermediary in time to the first and second digital images (60 of fig. 3); and using the first, second, and intermediary border regions for masking the foreground portion from the background portion in the digital video (56 of fig. 3); wherein receiving a first and a second input comprise: receiving user inputs defining the border regions (fig. 1); and where interpolating an intermediary border region comprises: interpolating an intermediary border region automatically without user input (12 of fig. 1, e.g. the processor has an automatic function to do the interpolating the intermediary border regions).

5. Claims 1-98 are rejected under 35 U.S.C. 102(e) as being anticipated by Pettigrew et al. as shown in figures 1-32.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



Wilensky et al (US 2004/0042662 A1) disclose identifying intrinsic pixel colors in a region of uncertain pixels.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung T. Vo whose telephone number is (703) 308-5874. The examiner can normally be reached on 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris. Kelley can be reached on (703) 305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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PATENT EXAMINER

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